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pendently of education, from the parent to its offspring, several facts which have fallen under his observation in the course of various experiments commenced by him nearly sixty years ago and continued to the present time. He relates that a young terrier, whose parents had been trained to destroy pole-cats, and a young springing spaniel, whose ancestors through many generations had been employed in finding woodcocks, were reared together as companions; and that each of them, immediately on seeing, and for the first time in its life, the particular prey to which it was guided by hereditary instinct, pursued it with intense eagerness, while it did not appear to notice that which attracted its companion. In several instances he found that young springing spaniels, wholly inexperienced, were very nearly as expert in finding woodcocks as their well-trained parents. The habits of the woodcock have in the course of the last sixty years undergone considerable change, the fear of man having during that period become much stronger by transmission through many successive generations. The author believes that by continued education these hereditary propensities might be suppressed and others substituted: thus the habits of the springing spaniel would never have been acquired, if shooting on the wing had not been practised by man. A young dog, of the variety usually called *retrievers*, on account of their being trained to find and recover wounded game, performed this office, although wholly untaught, quite as well as the best-instructed dog. The male and the female parents appear to possess similar powers of transmitting to their offspring these hereditary feelings and propensities; excepting in the case of hybrid progeny, in which the author thinks he has witnessed a decided prevalence of the character of the male parent. With regard to dogs, the influence of one or other of the parents, and sometimes of both, may occasionally be traced, but without any constancy as to the particular predominance of either sex.

A paper was read "On Meteorological deductions from Observations made at the Observatory at Port Louis in the Mauritius, during the years 1833, 1834, and 1835." By John Augustus Lloyd, Esq., Surveyor-General of that Island, F.R.S. Communicated by Captain Beaufort, R.N., Hydrographer to the Admiralty, F.R.S.

The observations, from which the results recorded in the present paper were made, are nearly 50,000 in number, and were taken four times each day, at the hours of 8 A.M. noon, 4 and 8 P.M. The details of the observations themselves are about to be forwarded to the Royal Society; they relate to the states of the barometer, thermometer, hygrometer, rain gauge, and the appearance of the atmosphere with regard to clearness or cloudiness.

June 1, 1837.

FRANCIS BAILY, Esq., V.P. and Treasurer, in the Chair.

William Ayrton, Esq., James Carson, M.D., William Hopkins, Esq., M.A., and Captain John Thomas Smith, were severally elected Fellows of the Society.

A paper was read, entitled, "On the development and extinction of regular doubly refracting structures in the crystalline lenses of animals after death." By Sir David Brewster, K.H., LL.D., F.R.S.

Since the year 1816, when the author communicated to the Royal Society an account of the doubly refracting structures which exist in the crystalline lenses of fishes and other animals, he has examined a great variety of recent lenses with the view of ascertaining the origin of these structures, the order of their succession in different lenses, and the purpose which they answer in the animal economy. He had discovered in the lenses of many fishes the alternation of portions, exerting, the one a positive, and the other a negative refractive action; but in his subsequent investigations he met with the greatest discrepancy as to the regularity of their arrangement. He found that in quadrupeds the central structure is positive; while in fishes, where there are three structures, it is always negative; but their positive structure in the former case sometimes exists alone, with faint traces of a negative structure, and sometimes it is followed by another positive structure separated from the first by a black neutral circle, in which the double refraction disappears; at other times various other combinations of these structures are presented. Occasionally, in the dark neutral line which separated two positive structures, he perceived a trace of an intervening structure, which seemed to be either about to disappear or about to be developed. This conjecture was satisfactorily verified by a series of observations which he made on the lenses of the sheep, the ox, and the horse, at different ages, and also on the same lens, during the spontaneous changes it undergoes when kept in distilled water. The negative structure was in these experiments gradually developed at the space intervening between the portions of the lens which had possessed the positive structure; and thus the same parts assumed in succession doubly refractive actions of opposite kinds. The author intimates his intention of pointing out, in a separate paper, the conclusions deducible from these facts respecting the cause and cure of cataract.

June 8, 1837.

WILLIAM LAWRENCE, Esq., V.P., in the Chair.

Robert Bigsby, Esq., George Edward Frere, Esq., and Captain Joseph Ellison Portlock, R.E., were elected Fellows of the Society.

A paper was in part read, entitled "Observations on the minute structure of the higher forms of Polypi, with observations on their classification." By Arthur Farre, M.B. Communicated by Richard Owen, Esq., F.R.S.

June 15, 1837.

FRANCIS BAILY, Esq., V.P. and Treasurer, in the Chair.

James F. W. Johnston, Esq., A.M., was elected a Fellow of the Society.

The following papers were then read, viz.: